Amendments to the Specification:

Please replace paragraph [0007], with the following rewritten paragraph (with deletions shown in strike-out and additions shown in underlining:

[0007] It is also an object of the present invention to provide a thermal flow sensor based on the above method. This sensor is illustrated in FIG. 2. It is composed of a silicon substrate (1) on which a closed structure of a porous silicon membrane (2) with a cavity underneath (3) is formed locally by an electrochemical dissolution of silicon in an HF:ethanol solution after the appropriate deposition and patterning of a masking layer. Depending on the thickness of the porous layer and the depth of the cavity, the mask for porous silicon formation is either a resist layer, or silicon nitride or a bilayer of SiO_2 and polycrystalline silicon. An ohmic contact (13) has been created on the back side of the silicon substrate prior to the electrochemical process. The active elements of the sensor are composed of a heater (4) and two thermopiles (6,7) on each side of the heater. The number of thermocouples in each thermopile depends on the needed sensitivity of the device. The hot contacts of the thermocouples (5) are on porous silicon and the cold contacts (10) are on the bulk crystalline silicon substrate (1). The required interconnections (11) and metal pads (12) are formed by aluminum deposition and patterning. A passivation layer may be also deposited on top of the thermal flow sensor, consisting of an insulating layer, for example silicon oxide, or silicon nitride or polyimide. An electrical isolation layer (14) is deposited on top of the silicon substrate (1) so as to assure the electrical isolation between the sensor elements and the substrate. The thermocouple material is ~~n-type~~ <u>p-type</u> poly/Al or n-type/p-type poly. The first case limits the temperature of operation of the device at around 400 °C, while the second permits operation at temperatures up to ~ 900 °C. The heater is composed of p-type polycrystalline silicon and it is maintained at constant power or constant temperature by using an external electronic circuit, which stabilizes the power or the temperature by providing a current feedback if the temperature changes. The device can also operate at constant current on the heater, but the use of constant power is better in the case of a high flow range. Indeed, under flow the resistor is instantly cooled down by the gas flow and this causes a slight change of its resistance, which gives a measurable effect to the thermopiles output at high flow. This effect is minimized if the resistance change is compensated by a slight change in the current, so as to keep the power consumption or the temperature on the heater constant.